

THREE NEW SPECIES OF BROCHYMENA (PENTATOMIDAE) FROM THE UNITED STATES AND MEXICO.

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During examination of a number of different collections of the genus *Brochymena* several series were recently set aside as not conforming to already known species. The characters of these insects are such as to warrant the erection of new species for them. The following are the descriptions of these from collections of the United States National Museum, of the California Academy of Sciences, the private collection of Mr. H. G. Barber, of Washington, D. C., and the author's personal one.

Brochymena barberi*, n. sp. (Fig. 1).

Closely allied to *B. aculeata* Dist. but differs in several very important characters. Form broadly oval, sub-depressed; connexivum distinctly explanate; color dull yellowish gray to brown gray; head widest just in front of eyes then gently converging as far as the acute, large sub-apical teeth; in *B. aculeata* the sides are more nearly parallel; lobes of the juga extend beyond the tylus by about a distance equal to their width there; lobes are obliquely acute and tend to flare outward (Fig. 1-a), not truncated and straight as in *B. aculeata* (Fig. 1-e); disc quite densely nigro-punctate, the punctures tend to be elliptical rather than circular; a small tubercle, sometimes acute, just in front of each eye; surface of pronotum moderately undulant with the smooth areas about the calli rather small, long and thin, not rounded and embossed; punctures crowded, a pair of smooth, pale vermiculate markings at inner back corner of calli; antehumeral sinus quite prominent and disc there impressed; humeri quite rectangular and protrude prominently, their dorsal surfaces somewhat transversely rugose; each humerus terminates in a pair of prominent divergent teeth between which are two or three smaller ones (Fig. 1-a); a third large tooth occurs at the anterior basal border of the humerus; pronotal marginal teeth are four to five in number, are very long, narrow and very sharp; the basal third of the scutellum gibbose, its highest point well above the disc of the pronotum; a weak saddle between the lateral portions of this raised area, this bordered with a pair

* The drawings of head and genitalia of *B. aculeata* were made by Mr. W. E. China of the British Museum to whom I am indebted for notes on Distant's type of that species.

of smooth, crescentic yellowish bars; four obscure fuscous bands of larger pits longitudinally across the gibbose area; median scutellar carina broad and not very high, the disc laterally somewhat depressed into a pair of shallow furrows; scutellar apex narrowly rounded, paler with fewer fuscous punctures in apical third; tip slightly upturned; elytra with punctures gradually congesting apically; basal fourth with evident smooth calloused pale areas; discal spot calloused and prominent; membrane hyaline with markings dark fuscous, the vermiculate ones between the veins quite large; connexivum alternated, with the pale band triangular in outline, the apex pointing inward; *posterior angles of, at least the first three visible, abdominal segments prominent and acute*, projecting strongly from the edge (Fig. 1-b); in *B. aculeata* these angles are not prominent, do not project and are rectangular; edge of buccula feebly sinuate ending in a sharp tooth; the frontal edge of the jugum is strongly sinuate (Fig. 1-c); in *B. aculeata* the buccular tooth is blunt and the frontal edge of the jugum is more nearly obliquely truncate (Fig. 1-f); the middle portion of the ventral thorax dull yellow with some scattered reddish fuscous punctures; the lateral half of the ventral thorax darker; the intercoxal darker blotches on mesosternum are continuous across the segment; the coxae, trochanters and basal third of femora dull yellow; distal two thirds of femora heavily spotted with deep fuscous, this forming a broad band apically, there interrupted with an incomplete annulus of pale; *fore tibiae dilated apically*, almost to the extent found in *B. haedula* and much greater than found in *B. aculeata*; ventral abdominal segments rather flattish, dull orange to yellow brown with scattered fuscous punctures which become darker fuscous laterally and there form some horse-shoe-like markings; rostral furrow shallow; beak long, reaching at least the front edge of the third visible segment; basal valves of female genital plates very convex; the posterior face of each *sharply declivent and deeply impressed*; a fuscous or reddish fuscous border reaches about half-way up the declivent face; intervalvular sinus deep and broad; male cup broadly oval in the outline with the claspers very distinctive, *the head of the visible lobe triangular in outline*, the apex pointing downward and the face slightly concave (Fig. 1-d); the claspers of *B. aculeata* are not triangular in outline but narrowly elongate somewhat like those of *B. haedula* (Fig. 1-g); the proctiger orange brown, its sides distinctly concave and a broad carinate ridge evident; this has an obtuse bend in it dorsally.

Size: Female: 14 mm. long; 8 mm. across humeri; 8½ mm. across abdomen.

Male: 13½ mm. long; 8 mm. across humeri; 8½ mm. across abdomen.

There is close relationship to *B. aculeata* shown in the size of the pronotal and humeral teeth, the long juga, the general color and the outline of the male genital cup; the main differences are the sharp buccular tooth in *B. barberi*, the obliquely flaring juga, the sharp angulation of the abdominal segments, the dilated fore tibiae, the distinctly triangular outline to the posterior face of the male paramere.

Described from eight specimens, three males and five females.

Holotype: Female: Sonoita, Santa Rita Mts., Arizona. Collected by H. Ruckes, July 21st, 1937, and deposited in the American Museum of Natural History.

Allotype: Male: Sonoita, Santa Rita Mts., Arizona. Collected by H. Ruckes, July 21st, 1937. Author's collection.

Paratypes: Four females and one male in the collection of the United States National Museum, all from the Huachuca Mountains in Arizona and bearing no date labels. One male specimen in the H. G. Barber collection, this dated July 28, 1905, from the Huachuca Mts., Arizona.

Since writing this description, I have received specimens from the collection of the University of Kansas. I wish to add four paratypes to the list; two females, Sta. Rita Mts., Ariz.; July (F. H. Snow); one male, Huachuca Mts., Ariz., August 1, 1927 (P. A. Readio); one male, Sta. Rita Mts., Ariz.; August 18, 1935 (Beamer).

I take pleasure in naming this species after my friend, Mr. H. G. Barber, one of the leading American hemipterists of our time.

Brochymena barberi* var. *diluta, new variety.

Very similar to *B. barberi* but with sufficient difference in important characters to warrant being separated into a varietal category.

In var. *diluta* the principal characters defined for the species *barberi* are all present in a reduced form, *i.e.*, the color is lighter, the teeth shorter, the angulation of various parts more obtuse, etc.; hence the application of the term *diluta*. In var. *diluta* the lobes of the juga do not extend beyond the end of the tylus or if so by only a very small distance; the apex of the head before the teeth is less acutely triangular; the humeral teeth are not as long as in *B. barberi* and are more blunt; the posterior angles of the abdominal segments are distinctly not acute, tending to be more rectangular and even obtusely rounded; the basal area of the scu-

tellum is raised but not gibbose, there is still a weak saddle between the halves; the frontal edge (side view) of each jugum is less sinuate and more nearly arcuate than in *barberi*; the ventral abdominal surface is more yellowish and the punctures are lighter; there is much more pale on the lateral portion of each abdominal segment and the characteristic horse-shoe-shaped marks on each segment are less distinct and may even be obsolete.

The male and female genitalia are identical with those of the typical *barberi*; since no other relatives in the genus, as now known, have these distinctive characters there is no question of relationship between this variety and the typical species. Since all the specimens, in the collection I have examined, are from Texas, this variety may be an eastern representative of the species.

Described from six specimens from western Texas.

Holotype: Female: Size $13\frac{1}{2}$ mm. \times $8\frac{1}{2}$ mm.: Brownsville, Texas; June, 1901. Collection of Mr. H. G. Barber, Washington, D. C.

Allotype: Male: Size $12\frac{1}{2}$ mm. \times $7\frac{1}{2}$ mm.: Brownsville, Texas; May, 1903. Collection of United States National Museum.

Paratypes: Brownsville, Texas, May, 1903; Brownsville, Texas, no date (both in the H. G. Barber Coll.) Esperanza Ranch, Brownsville, Texas, July 30th, 1931; Kerrville, Texas, June 19, 1908 (both in the U.S.N.M. Coll.).

I wish to add four more paratypes to this series, found in the University of Kansas collection. Two females, Hidalgo Co., Texas, August 14, 1928 (Beamer); one female, Brownsville, Texas, June (Snow); one male, Cameron Co., Texas, August 3, 1928 (Shaw).

Brochymena usingeri, n. sp. (Fig. 2).

Form broadly oval, somewhat depressed; venter not appreciably convex; color, medium fuscous with a tinge of reddish, shiny; diameter of the head in front of eyes slightly wider than distance from that line to apex of head; sides very slightly converging, the edges of the juga but weakly bent inward from edges of the head behind the subapical teeth; juga longer than the tylus and *exceeding it by about a length equal to the width of one jugum at that point; inner margins of the juga lobes parallel so that a conspicuous rectangular sinus appears between them* (Fig. 2-a); subapical teeth broadly triangular; distal half of tylus, apical lobes of juga and a third of the subapical teeth, *impunctate and pale*; punctations of the head irregular with a tendency to coalesce; pronotum with antehumeral sinus weak and inconspicuous, so that front edge of humerus and margin of pronotum are nearly a continuous line; front half of pronotal disc with irregular punctures, many coa-

lescings into corroded areas about the calli; front half of disc provided with obliquely elongated, smooth, irregular island-like, raised, pale areas; posterior half of disc with rather regular and uniform circular nigro-fuscous punctures of medium size; *crest of each humerus with a prominent oblique smooth pale band*; just inside of this an oblique rugose band of broad, black punctures cuts across the shoulder; marginal pronotal teeth concolorous with the pale markings on head and pronotum; teeth four to seven in number with smaller ones interpolated between them; humeri with one or two minute crenulations at the most, otherwise edentate; the most striking character of this species lies in the *flat-topped nature of the raised basal portion of the scutellum, the whole surface appearing truncated* as in *B. affinis*, this region is suffused with reddish; the posterior surfaces of this raised portion become declivent and a broad median elevation, broader than a carina, extends to the apical third of the shield; the frenum ends posterior to the middle of the scutellar edge so that the apical tongue is short; punctures on the basal raised portion large, deep and irregular, tending to coalesce at the lateral thirds, there forming a broad, oblique corroded band just inside the basal corners and *separated therefrom by a narrow, oblique, smooth raised line of pale*; middle portion of scutellum with rather uniform shallow nigro-fuscous punctures of medium size; *punctures at the apical fifth suddenly become much smaller and more condensed*; elytral punctures small, shallow and regular, interspersed with numerous small irregular smooth points; membrane somewhat infused with deep orange brown, the veins and vermiculate markings darker reddish fuscous not outlined by a pale border of membrane; exposed edge of connexivum alternated with dull yellow and dark brown, punctures small and scattered; incisures between segments raised and pale; *posterior angles of abdominal segments inconspicuous and distinctly obtuse* (Fig. 2-b); edge of the buccula sinuate and ending in a prominent stout acute tooth which tends to be concave on its front edge (Fig. 2-c); basal antennal segment paler than the remaining four which are nigro-fuscous; segment two somewhat shorter than segment three; segment three, four and five subequal; fore tibiae stoutish and gradually dilating toward the apex; femora with fuscous maculations tending to coalesce into longitudinal vittae; a longitudinal pale stripe on front and back surfaces of the femora; a subapical incomplete pale annulus present, this most noticeable on the fore femora; tibiae annulated as in allied species; second joint of each tarsus pale above, other parts fuscous; metasternal evaporating area conspicuously pale with a contrasting dark auricle which ends acutely and *is well raised above the surrounding disc*; ventral

abdominal color dull orange brown with a few widely scattered inconspicuous punctures, these most abundant laterally where they become darker and form horse-shoe-shaped designs near the edge of each segment; rostral groove long, broad and shallow the beak reaching at least the middle of the second visible segment; inner apical corners of basal valves of female genital plates reddish brown *together forming a dark narrow triangle in the middle of the genitalia*; narrow inner border of each basal plate slightly impressed, certainly not raised or reflexed; male genital cup with lateral corners quite prominent, not so prolonged as in *B. affinis* or *B. hoppingi* but longer than those of *B. quadripustulata*; upper surface of each male clasper broadly oval in outline, *the under surface provided with a high carina; the proctiger broad, sides convex, without a median keel of any kind*; the upper lip of the genital cup deep nigro-fuscous, provided with a pair of stout prominent spurs pointing in direction of claspers.

Size: Female: $17\frac{1}{2}$ mm. long; $9\frac{1}{2}$ mm. across humeri.

Male: $16\frac{3}{4}$ mm. long; $8\frac{1}{2}$ mm. across humeri.

The form of the male claspers and the convex sides of the proctiger suggest affinity to *B. sulcata* Van D. and *B. affinis* Van D., though there is no deep sulcus across the posterior face of the cup nor are the corners of the cup extended; the general build is somewhat like that of *B. quadripustulata* though the juga are not so long and do not meet or overlap in front; the color is a yellowish fuscous suffused with reddish giving a lighter appearance than in that species; the surface of the body is quite faceted and shiny.

Described from nine specimens, seven females and two males all collected by R. L. Usinger (after whom the species is named) and H. E. Hinton.

Holotype: female, Tejupilco, Temascaltepec, Mexico. June 20, 1933. Museum, California Academy of Sciences.

Allotype: male, Tejupilco, Temascaltepec, Mexico. June 20, 1933. Museum, California Academy of Sciences.

Paratypes: Four females and one male from the type locality and dated June 20-29, 1933. One female from Rio de Arriba, Mexico, dated June 9, 1933. One female from Bejucos, Mexico, July 3, 1933.

Brochymena humeralis, n. sp. (Fig. 3).

Form broadly oval; color grayish yellow brown, shiny; not appreciably depressed and the dorsal surface faceted; the head as long before the eyes as wide just in front of them; sides of head converging to a subacute apex; subapical teeth not large, acute; the

sinus acute; edges of the juga bend inwardly away from the margin of the head behind the subapical teeth; juga do not or only slightly extend beyond the tylus, their tips acute; apex of head narrowly triangular and subtruncate (Fig. 3-a); the most striking character of the species appears in the *protruding prominent humeri* (Fig. 3-a); the lateral margin of the pronotum has a *well defined and deep antehumeral sinus*, the front edge of each humerus meeting the long axis of the pronotum almost at right angles; the apex of the humerus is acute and slightly produced; a short, rugose band of black pits cuts obliquely across the base of each humerus; marginal teeth of pronotum four to six in number, small and irregular with smaller ones interpolated; front margin of humerus with three retrorse serrations, apex acute and smooth; punctures of pronotum mixed in size; a pair of irregular, longitudinal, short bands of deep, large black pits extends across the highest points of the posterior half of the pronotal disc; basal portion of the scutellum raised and quite convex but not tumid; punctures and pits of various sizes and mixed throughout; there is a band of deep corroded pits obliquely across each basal corner and some obsolescent dark, pitted vittae across the median third; the elevated portion continues posteriorly as a broad, short convex ridge, thicker than a carina; posterior half to two-thirds undulating; the frenum ends posterior to middle of scutellar edge and the apical tongue is rather short; elytral punctures large and fewer basally becoming gradually finer and coalescing apically; numerous substellate white points and reticulations scattered over the surface; a discal point prominent; membrane hyaline with a fulvous tinge; veins and vermiculate markings bright reddish brown and without pale membranous borders; connexivum alternated dull yellow and brown; some fulvous punctures in the yellowish band; incisures raised and pale; *posterior angles of abdominal segments prominently protruding and rectangular* (Fig. 3-b); edge of buccula *shallowly sinuate* and ending in a stout acute tooth, tending to have a concave front edge (Fig. 3-c); first and second antennal segments dull reddish brown, remaining ones darker brown becoming fuscous; segments two and three essentially subequal; segment four the longest; maculations of legs reddish brown to fulvous rather than fuscous, color design similar to allied species; fore tibiae stoutish slightly dilated apically giving a subclavate outline; metasternal evaporating area pale, orifice opens laterally; the crateriform base well elevated and auricle relatively short and dark and well raised above surrounding disc; ventral abdominal segments dull yellow with a scattering of rufous to fuscous punctures, pubescence sparse and silky pale; horse-shoe-shaped lateral designs on each abdomi-

nal segment obsolescent or inconspicuous; rostral groove long and shallow, beak reaching at least the front margin of the third visible segment; *inner narrow margins of the basal valves of the female genital plates very narrowly upturned or reflexed*, so that, when valves are tightly closed there appears to be a thin median carina between them.

Size: Female: 18 mm. long; 10 mm. across the humeri.

The species is somewhat like *B. quadripustulata* with its prominent rectangular angles on the abdominal segments; like *B. carolinensis* with its faceted dorsal surface and prominent humeri, which in *B. humeralis* are still more pronounced, like *B. cariosa* with its acute juga and compound carina-like ridge between the basal valves of the female genital plates.

Described from five specimens, all females, collected by R. L. Usinger and H. E. Hinton at Bejucos and Tejupilco, Temascaltepec, Mexico, June 29th to July 5th, 1933.

Type: Female, Bejucos, Temascaltepec, Mexico, July 2, 1933. Museum, California Academy of Sciences.

No allotype is now known.

Paratypes: four females, Tejupilco, Temascaltepec, Mexico, June 29th and July 5th, 1933; two deposited in Museum, California Academy of Sciences and two retained by the author.

***Andrallus spinidens* Fabricius in the U. S.**—C. A. Hart, in 1919 (The Pentatomoidea of Illinois, Ill. Nat. Hist. Surv., Bull. XIII: 198) reported the capture of a specimen of this large asopine at Brownsville, Texas. However, in 1917 Dayton Stoner described "A New Species of *Apateticus* from Louisiana" (Ent. News, XXVIII: 462-463) under the name *Apateticus ludovicianus*. The description and the figure show clearly that the new species belongs in *Andrallus* Bergroth (*Audinetia* Ellenrieder), and not in *Apateticus* auctt.

The description and the figure of *Apateticus ludovicianus* indicate a form with prominent blunted humeral spines, while in *Andrallus spinidens* these are acute. But the pale apex of the scutellum and narrow border of the corium, together with the calloused impunctate transverse carina of the pronotum running between the humeri, are characteristic of the second named species.

At the moment, and in the absence of further authentic specimens from our Gulf States, it might seem best to synonymize *A. ludovicianus* Stoner with *A. spinidens* Fabricius. Should further similar specimens turn up, Stoner's name may stand for a second species of *Andrallus*, distinguished by the blunted humeral spines or processes.—J. R. DE LA TORRE-BUENO, Tucson, Arizona.